AMENDMENTS TO THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A recombinant *E. coli* host cell which is genetically modified for synthesis of a polyketide,

wherein said modification comprises

incorporation of a propionyl CoA carboxylase (pcc) expression system comprising the *pcc*B and *acc*A2 genes from *S. coelicolor* wherein said pcc expression system produces an enzyme capable of synthesizing 2S-methylmalonyl CoA,

incorporation of at least one expression system for a modular polyketide synthase (PKS), and

incorporation of at least one expression system for a phosphopantetheinyl transferase that phosphopantetheinylates the PKS.

Claims 2-54 (Cancelled)

Claim 55 (Currently Amended): The host cell as in claim ~~54~~ 1

wherein the host cell further comprises an expression system for biotin ligase which is the *bir*A gene from *E. coli*.

Claim 56 (Previously Presented): The host cell as in claim 1

wherein the phosphopantetheinyl transferase expression system comprises the *sfp* gene from *Bacillus subtilis*.

Claim 57 (Cancelled)

Claim 58 (Currently Amended): The host cell as in claim 1

wherein the cell's *prp*A-D operon is ~~disabled~~ deleted or not expressed.

Claim 59 (Previously Presented): The host cell as in claim 1 wherein the PKS is deoxyerythronolide B synthase (DEBS).

Claim 60 (Previously Presented): The host cell of claim 1 wherein the polyketide is 6-deoxyerythronolide B (6-dEB).

Claim 61 (Currently Amended): A recombinant *Streptomyces* host cell which is genetically modified for enhanced synthesis of a polyketide,

wherein said modification comprises incorporation of ~~an added~~ the *mat*BC gene from *Streptomyces coelicolor* or the *mat*BC gene from *Rhizobium trifoli* wherein the *mat*BC gene is in addition to endogenous *mat*BC.

Claim 62 (Cancelled)

Claim 63 (Previously Presented): The host cell as in claim ~~62~~ 61 wherein the modification further comprises incorporation of ~~a~~ the *mat*A gene from *Rhizobium trifoli*.

Claim 64 (Previously Presented): The host cell as in claim 61 wherein said modification further comprises incorporation of at least one expression system for a modular polyketide synthase (PKS).

Claim 65 (Previously Presented): The host cell as in claim 61 wherein the host cell is *Streptomyces coelicolor*.

Claim 66 (Currently Amended): The host cell as in claim 61 wherein the *mat*BC gene is from *Rhizobium trifoli*.

Claim 67 (Currently Amended): The host cell as in claim ~~61~~ 64 wherein the PKS is DEBS.

Claim 68 (Previously Presented): The cell as in claim 61

wherein the polyketide is 6-dEB.

Claim 69 (Currently Amended): A recombinant *E. coli* host cell which is genetically modified for synthesis of a polyketide,

wherein said modification comprises

incorporation of ~~a *matB*~~ the *mat*BC gene from *Streptomyces coelicolor* or the *mat*BC gene from *Rhizobium trifoli*, and

incorporation of at least one expression system for a modular polyketide synthase (PKS), and

incorporation of at least one expression system for a phosphopantetheinyl transferase that phosphopantetheinylates the PKS.

Claim 70 (Cancelled)

Claim 71 (Currently Amended): The host cell as in claim [[~~70~~]] 69

wherein the modification further comprises incorporation of ~~a~~ the *mat*A gene from *Rhizobium trifoli*.

Claim 72 (Currently Amended): The host cell as in claim 69

wherein the *mat*BC gene is from *Rhizobium trifoli*.

Claim 73 (Previously Presented): The host cell as in claim 69

wherein the PKS is DEBS.

Claim 74 (Previously Presented): The host cell as in claim 69 wherein the polyketide is 6-dEB.

Claim 75 (Withdrawn): A method to produce a polyketide which method comprises culturing the cells of claim 1 under conditions wherein said polyketide is produced.

Claim 76 (Withdrawn): A method to assess the results of a procedure effecting modification of polyketide synthase genes according to claim 1, resulting in a mixture of said modified genes which method comprises

transfecting a culture of *E. coli* of claim 1 with said mixture of modified genes,

culturing individual colonies of said transformed *E. coli*, and

assessing each colony for polyketide production.

Claim 77 (Currently Amended): The method of claim 75 which further includes providing a substrate, wherein the substrate is of the formula ~~$R_2C(COOH)_2$~~ $RCH(COOH)_2$ wherein ~~one~~ R is H, methyl or ethyl ~~and the other is H~~.

Claim 78 (New): A method to produce a polyketide which method comprises culturing the cells of claim 61 under conditions wherein said polyketide is produced.

Claim 79 (New): A method to assess the results of a procedure effecting modification of polyketide synthase genes according to claim 61, resulting in a mixture of said modified genes which method comprises

transfecting a culture of *Streptomyces* of claim 61 with said mixture of modified genes,

culturing individual colonies of said transformed *Streptomyces*, and

assessing each colony for polyketide production.

Claim 80 (New): The method of claim 61 which further includes providing a substrate, wherein the substrate is of the formula $RCH(COOH)_2$ wherein R is H, methyl or ethyl.

Claim 81 (New): A method to produce a polyketide which method comprises culturing the cells of claim 69 under conditions wherein said polyketide is produced.

Claim 82 (New): A method to assess the results of a procedure effecting modification of polyketide synthase genes according to claim 69, resulting in a mixture of said modified genes which method comprises

transfecting a culture of *E. coli* of claim 69 with said mixture of modified genes,

culturing individual colonies of said transformed *E. coli*, and

assessing each colony for polyketide production.

Claim 83 (New): The method of claim 69 which further includes providing a substrate, wherein the substrate is of the formula $RCH(COOH)_2$ wherein R is H, methyl or ethyl.